IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Jan Klier	§	Art Unit:	2174
		§		
Serial No.:	10/723,037	§		
		§	Examiner:	Boris M. Pesin
Filed:	November 26, 2003	§		
		§		
For:	Drive Controller User Interface	§	Atty. Dkt. No.:	200312050-1
		§		(HPC.0397US)

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF PURSUANT TO 37 C.F.R § 41.37

Sir:

The final rejection of claims 1-14, 17, 18, 20, 21, and 23-26 is hereby appealed.

I. REAL PARTY IN INTEREST

The real party in interest is the Hewlett-Packard Development Company, LP. The Hewlett-Packard Development Company, LP, a limited partnership established under the laws of the State of Texas and having a principal place of business at 11445 Compaq Center Drive West, Houston, TX 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a Delaware Corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPQ Holdings, LLC.

II. RELATED APPEALS AND INTERFERENCES

None.

III. STATUS OF THE CLAIMS

Claims 1-14, 17, 18, 20, 21, and 23-26 have been finally rejected and are the subject of this appeal. Claims 15, 16, 19, and 22 have been cancelled.

IV. STATUS OF AMENDMENTS

No amendment after the final rejection of July 17, 2009 has been submitted. Therefore, all amendments have been entered.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The following provides a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number and to the drawings by reference characters, as required by 37 C.F.R. § 41.37(c)(1)(v). Each element of the claims is identified by a corresponding reference to the specification and drawings where applicable. Note that the citation to passages in the specification and drawings for each claim element does not imply that the limitations from the specification and drawings should be read into the corresponding claim element.

Independent claim 1 recites an automated storage system (Fig. 1:100) comprising:

a data access drive (Fig. 1:130) operable to read and write computer-readable data on storage media (Spec., p. 4, ¶ [0015], ln. 1-5);

a drive controller (Fig. 2:200) provided at the data access drive (Spec., p. 6, ¶ [0020], ln. 1-6; p. 7, ¶ [0024], ln. 1-8);

computer-readable program code provided in computer-readable storage (Fig. 2:202) at the data access drive, the computer-readable program code (Fig. 2:205, 206) executable by the drive controller for generating drive information and user interface rendering data, wherein the drive information comprises a status of the data access drive and an operating speed of the data access drive (Spec., p. 7, ¶ [0024], ln. 1 - p. 8, ¶ [0028], ln. 8); and

a user interface module (Fig. 2:220) to output the drive information via a user interface (Fig. 3:300) in accordance with the user interface rendering data (Spec., p. 9, ¶ [0031], ln. 1 - p. 10, ¶ [0034], ln. 6).

Independent claim 11 recites a method executed by a processor (Fig. 2:201), comprising:

receiving (Fig. 4:400) drive information and graphical user interface rendering data generated by a drive controller (Fig. 2:200) at a data access drive (Fig. 1:130) of a storage system, wherein the drive information comprises a status of the data access drive and an operating speed of the data access drive (Spec., p. 6, ¶ [0021], ln. 1-6; p. 7, ¶ [0024], ln. 1 - p. 8, ¶ [0028], ln. 8);

outputting (Fig. 4:420) the drive information in a graphical user interface (Fig. 3:300) in accordance with the graphical user interface rendering data (Spec., p. 6, ¶ [0021], ln. 1-6; p. 7, ¶ [0025], ln. 1-7; p. 10, ¶ [0033], ln. 1 - p. 13, ¶ [0044], ln. 8); and

receiving an indication of activation of a button (Fig. 3:395) in the graphical user interface, wherein activation of the button is a request for the drive information, and wherein receiving the drive information and graphical user interface rendering data is in response to the indication of activation of the button (Spec., p. 8, ¶ [0028], ln. 1-8; p. 9, ¶ [0031], ln. 1-6; p. 10, ¶ [0033], ln. 1 - p. 11, ¶ [0036], ln. 8; p. 13, ¶ [0044], ln. 1-8).

Independent claim 18 recites in an automated storage system (Fig. 1:100) having a graphical user interface (Fig. 3:300 including a display (Fig. 2:240) and a user interface selection device (Fig. 2:250, 255), a method of providing and selecting from the display comprising:

receiving activation of a button (Fig. 3:395) in the graphical user interface (Fig. 3:300), wherein activation of the button is a request for drive information (Fig. 3:393) of a data access device (Fig. 1:130) in the automated storage system, wherein the drive information comprises a status of the data access drive and an operating speed of the data access drive (Spec., p. 6, ¶ [0021], ln. 1-6; p. 7, ¶ [0024], ln. 1 - p. 8, ¶ [0028], ln. 8; p. 13, ¶ [0044], ln. 1-8); and

sending an indication regarding the activation of the button (Fig. 3:395) to a drive controller (Fig. 2:200) at the data access drive (Spec., p. 9, ¶ [0031], ln. 1-6; p. 11, ¶ [0035], ln. 1-4; p. 13, ¶ [0044], ln. 1-8);

responsive to the indication regarding the activation of the button (Fig. 3:395), receiving drive information and graphical user interface rendering data from the drive controller (Spec., p. 7, ¶ [0025], ln. 1-7; p. 8, ¶ [0028], ln. 1-6; p. 13, ¶ [0044], ln. 1-8); and

displaying the drive information (Fig. 3:393) in an application window (Fig. 3:310) in the graphical user interface in accordance with the graphical user interface rendering data (Spec., p. 12, ¶ [0038], ln. 1-6; p. 13, ¶ [0042], ln. 1 - ¶ [0044], ln. 8).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. Claims 1-5, 7-10, 13, and 26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 6,532,535 (Maffezzoni) in view of HD_Speed (SteelBytes.com) and further in view of Erik Riedel, *Active Disks-Remote Execution for NASD* (Riedel).

B. Claims 11, 12, 14, 17-18, 20-21, and 24-25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Maffezzoni in view of HD_Speed (SteelBytes.com).

C. Claim 6 was rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Maffezzoni in view of HD_Speed, Riedel, and U.S. Patent Publication 2002/0124124 (Matsumoto).

D. Claim 23 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Maffezzoni in view of HD_Speed, Riedel, and in view of CD Speed 2000.

VII. ARGUMENT

The claims do not stand or fall together. Instead, Appellant presents separate arguments for various independent and dependent claims. Each of these arguments is separately argued below and presented with separate headings and sub-headings as required by 37 C.F.R. § 41.37(c)(1)(vii).

A. Claims 1-5, 7-10, 13, and 26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 6,532,535 (Maffezzoni) in view of HD_Speed (SteelBytes.com) and further in view of Erik Riedel, *Active Disks-Remote Execution for NASD* (Riedel).

1. Claims 1-5, 8-10.

It is respectfully submitted that independent claim 1 is non-obvious over Maffezzoni, HD_Speed, and Riedel.

To make a determination under 35 U.S.C. § 103, several basic factual inquiries must be performed, including determining the scope and content of the prior art, and ascertaining the differences between the prior art and the claims at issue. *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 U.S.P.Q. 459 (1965). Moreover, as held by the U.S. Supreme Court, it is important to

identify a reason that would have prompted a person of ordinary skill in the art to combine reference teachings in the manner that the claimed invention does. *KSR International Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1741, 82 U.S.P.Q.2d 1385 (2007).

Claim 1 recites computer-readable program code provided in computer-readable storage **at** the data access drive, where the computer-readable program code is executable by a drive controller **at** the data access drive for generating drive information **and** user interface rendering data, and where the drive information comprises a status of the data access drive and an operating speed of the data access drive. Moreover, claim 1 recites a user interface module that outputs the drive information via a user interface in accordance with the user interface rendering data.

As conceded by the Examiner, the hypothetical combination of Maffezzoni and HD_Speed do not disclose providing computer-readable program code in computer-readable storage **at** the data access drive, where the computer-readable program code is executable by a drive controller **at** the data access drive for generating the drive information **and** user interface rendering data as recited in claim 1. 07/17/2009 Office Action at 4.

As clearly evidenced by the HD_Speed reference provided with the 07/17/2009 Office Action, the "disk software" that is the subject of the HD_Speed reference is for use with one of several WINDOWS® platforms (indicated as 95, 98, Me, NT4, 2000, and XP operating systems in the HD_Speed reference). The fact that the disk software of the HD_Speed reference is for use with a WINDOWS® platform establishes that its disk software is loaded and executed on a host computer that runs such operating system, and is not loaded and executed on a drive controller at the data access drive (which the Examiner had equated with a hard or removable drive in Maffezzoni, see 07/17/2009 Office Action at 3).

As further discussed below, Maffezzoni is also similarly directed to executing software on a host computer system. *See, e.g.*, Maffezzoni, 16:60-62 ("During this start-up phase, the host computer system loads the Genesis application."); 42:7-43 (referring to installation of Genesis software in the host computer system).

As purportedly disclosing the execution of computer-readable program code by a drive controller at a data access drive, the Examiner cited Riedel. 07/17/2009 Office Action at 4. Riedel discloses active disks with enhanced computational power. Page 11 of Riedel notes that the active disks are able to execute application-level code on drives. However, there is absolutely no hint given anywhere in Riedel that its application-level code that is executable on the drives is for generating drive information and user interface rendering data, where the drive information comprises a status of the data access drive and an operating speed of the data access drive, and where the user interface rendering data produced by the computer-readable program code is used by a user interface module to output drive information via a user interface, as recited in claim 1. Thus, even if Maffezzoni, HD_Speed, and Riedel could be hypothetically combined, the hypothetical combination of the references would not have led to the claimed subject matter.

Moreover, it is respectfully submitted that a person of ordinary skill in the art would not have been prompted to combine the teachings of Maffezzoni, HD_Speed, and Riedel. Like HD_Speed, Maffezzoni also describes software executable on a host computer. More specifically, Maffezzoni describes an intelligent backup system that includes a host computer 102 and a peripheral storage device 104 that is able to receive a media cartridge 108. *See* Maffezzoni, Fig. 1A. To provide the intelligent backup system, Genesis software components are loaded into the host computer. Maffezzoni, 16:60-62 ("During this start up phase, the host computer system loads the Genesis application."); 42:7-43 (referring to installation of Genesis

software in the host computer system). A Genesis preparation wizard, which is part of the Genesis software installed in the host computer, is able to prepare a cartridge 108 in the peripheral storage device 104 to enable the backup system. *Id.*, 10:3-9. Preparation of the cartridge 108 to become Genesis enabled involves writing a Genesis signature ID to the cartridge 108. *Id.*, 14:34-40. In this way, a user can select data from the host computer system to copy as backup data to the peripheral storage device 104. *Id.*, 11:19-22. In response to a system error, the host computer BIOS will inform the user that an error has occurred, and a SpareTire wizard graphical user interface 353 will then be launched, as depicted in Fig. 6B of Maffezzoni. *Id.*, 41:58-62.

The SpareTire wizard depicted in Fig. 6B, which is part of the Genesis software, is a wizard presented by the host computer based on software that is already installed at the host computer, and not based on "computer-readable program code provided in computer-readable storage at the data access drive," which was equated by the Examiner with a hard drive or removable drive.

The fact that the Genesis software of Maffezzoni and the disk software of HD_Speed are both executed on the host computer would have **led a person of ordinary skill in the art away from the claimed invention**. As explained in the Background section of the present application:

> Although software may be provided (e.g., on a network computer) that allows the user to view and configure the drives, the user has to install the software before it can be used. In addition, the software may not be compatible with the user's operating system.

Specification, ¶ [0004]. The teachings of Maffezzoni and HD_Speed are similar to what is described in the Background section of the present application—namely, that software related to a drive is executed on a host computer instead of a data access drive.

The third reference, Riedel, cited by the Examiner refers to active disks, but provides absolutely no hint whatsoever of addressing the issue raised in the Background section of the present application. Stated differently, a person of ordinary skill in the art would not have been led by Riedel to modify the teachings of Maffezzoni and HD_Speed to incorporate the software described in Maffezzoni and HD_Speed in a data access drive for execution on a drive controller of the data access drive.

Since a person of ordinary skill in the art would not have been prompted to combine the teachings of Maffezzoni, HD_Speed, and Riedel, the obviousness rejection is further defective for the foregoing reason.

In view of the foregoing, it is respectfully submitted that claim 1 and its dependent claims are clearly allowable over Maffezzoni, HD_Speed, and Riedel.

Reversal of the final rejection of the above claims is respectfully requested.

2. Claim 7.

Claim 7 depends from claim 1, and is therefore allowable for at least the same reasons as claim 1. Moreover, claim 7 recites that the system of claim 1 further comprises a communication path established between the drive controller (at the data access drive) and a system controller and between the system controller and the user interface module, where the drive information and the user interface rendering data (generated by the computer-readable program code executable by the drive controller at the data access drive) are provided to the user interface module via the communication path.

With respect to the dependent claim 7, the Examiner cited *Ex Parte Smith*, 83 U.S.P.Q.2d 1509 (BPAI 2007), for the proposition that a "simple substitution" of one known element for another or a "mere application" of a known technique to a piece of prior art does not make a

claim patentable. 07/17/2009 Office Action at 6. However, the rejection based on this assertion is incorrect, because the Examiner did not cite any objective evidence disclosing the claim elements conceded to be missing by the Examiner from the cited references. Rather than cite to objective evidence, the Examiner merely cited a case to effectively argue that the missing elements would be obvious. Such assertions constitute clear legal error, since the Examiner has merely made a conclusory remark of obviousness without any objective support.

Note that the communication path of claim 7 for providing drive information and user interface rendering data (generated by computer-readable program code executable in the data access drive) is between the drive controller (at the data access drive) and a system controller and user interface module. Note that Maffezzoni and HD_Speed disclose the execution of program code in the host computer, such that the "communication path" between the data access drive and the user interface module of claim 7 would be rendered completely unnecessary. In other words, the teachings of Maffezzoni and HD_Speed would have led to a person of ordinary skill in the art away from combining Maffezzoni, HD_Speed, and Riedel to achieve the claimed subject matter.

Claim 7 is therefore further allowable for the foregoing reason.

Reversal of the final rejection of the above claim is respectfully requested.

3. Claims 13, 26.

Claims 13 and 36 depend from base claims 11 and 18, respectively. Claims 13 and 26 were rejected as purportedly obvious over Maffezzoni, HD_Speed, and Riedel. These claims are allowable over the cited references for similar reasons as stated above with respect to claim 1.

Reversal of the final rejection of the above claims is respectfully requested.

B. Claims 11, 12, 14, 17-18, 20-21, and 24-25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Maffezzoni in view of HD_Speed (SteelBytes.com).

1. Claims 11, 12, 14, 17, 18, 20, 21, 24, 25.

Independent claim 11 was rejected as purportedly obvious over Maffezzoni and HD_Speed. This rejection is clearly erroneous.

The Examiner alleged that Maffezzoni discloses the following element of claim 11:

> receiving drive information and graphical user interface rendering data generated by a drive controller at a data access drive of a storage system, wherein the drive information comprises a status of the data access drive and an operating speed of the data access drive;

Specifically, the Examiner cited Fig. 6B of Maffezzoni, as purportedly disclosing: "receiving drive information and graphical user interface rendering data." Note that Fig. 6B of Maffezzoni depicts a SpareTire wizard, which is part of the Genesis software of Maffezzoni. The wizard is presented by the **host computer based on software that is already installed at the host computer**. Thus, Fig. 6B of Maffezzoni discloses a wizard generated by a host computer, and cannot constitute drive information and graphical user interface rendering data generated **by a drive controller at a data access drive of the storage system**, as recited by claim 11.

As purportedly disclosing the "drive controller" of claim 11, the Examiner cited column 17, lines 1-2, of Maffezzoni. This passage of Maffezzoni refers to a host computer system, logical partitions of hard drives, and controllers connected to hard drives. There is absolutely nothing in this passage of Maffezzoni that even remotely hints at the controller at a hard drive **generating** the drive information and graphical user interface rendering data, where the drive information comprises a status of the data access drive and an operating speed of the data access

drive, and where the graphical user interface rendering data is used to output drive information in a graphical user interface.

As discussed above, HD_Speed similarly describes performing tasks in a host computer, which would also not provide any hint on receiving drive information and graphical user interface rendering data **generated by a drive controller at a data access drive of a storage system**.

In view of the foregoing, it is clear that even if Maffezzoni and HD_Speed could be hypothetically combined, the hypothetical combination of the references would not have led to the claimed subject matter.

Moreover, in view of the fact that both Maffezzoni and HD_Speed provide teachings regarding performing tasks in a host computer, a person of ordinary skill in the art would not have been led away from generating drive information and graphical user interface rendering data by a drive controller at a data access drive of a storage system.

Thus, the obviousness rejection of claim 11 and its dependent claims is clearly erroneous.

Independent claim 18 is similarly allowable over Maffezzoni and HD_Speed, since claim 18 also recites receiving drive information and graphical user interface rendering data from the drive controller at the data access drive.

The obviousness rejection of claim 18 and its dependent claims is therefore erroneous.

Reversal of the final rejection of the above claims is respectfully requested.

C. Claim 6 was rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Maffezzoni in view of HD_Speed, Riedel, and U.S. Patent Publication 2002/0124124 (Matsumoto).

1. Claim 6.

In view of the allowability of base claim 1 over Maffezzoni, HD_Speed, and Riedel, the obviousness rejection of claim 6 over Maffezzoni, HD_Speed, Riedel and Matsumoto has been overcome.

Reversal of the final rejection of the above claim is respectfully requested.

D. Claim 23 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Maffezzoni in view of HD_Speed, Riedel, and in view of CD Speed 2000.

1. Claim 23.

In view of the allowability of base claim 1 over Maffezzoni, HD_Speed, and Riedel, the obviousness rejection of dependent claim 23 over Maffezzoni, HD_Speed, Riedel, and CD Speed 2000 has also been overcome.

Reversal of the final rejection of the above claim is respectfully requested.

CONCLUSION

In view of the foregoing, reversal of all final rejections and allowance of all pending claims is respectfully requested.

Respectfully submitted,

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VIII. APPENDIX OF APPEALED CLAIMS

The claims on appeal are (claims 15, 16, 19, and 22 have been cancelled):

1. An automated storage system comprising:

a data access drive operable to read and write computer-readable data on storage media;

a drive controller provided at the data access drive;

computer-readable program code provided in computer-readable storage at the data access drive, the computer-readable program code executable by the drive controller for generating drive information and user interface rendering data, wherein the drive information comprises a status of the data access drive and an operating speed of the data access drive; and

a user interface module to output the drive information via a user interface in accordance with the user interface rendering data.

2. The system of claim 1 wherein the computer-readable program code includes a render engine to generate the user interface rendering data.

3. The system of claim 1 wherein the computer-readable program code includes a state machine to retrieve the drive information.

4. The system of claim 1 wherein the drive controller retrieves updated drive information if a data access drive changes state.

5. The system of claim 1 further comprising a communication path established between the drive controller and the user interface module, the drive information and the user interface rendering data provided to the user interface module via the communication path.

6. The system of claim 5 wherein the communication path is established separate from a data path with the drive controller.

7. The system of claim 1 further comprising a communication path established between the drive controller and a system controller and between the system controller and the user interface module, the drive information and the user interface rendering data provided to the user interface module via the communication path.

8. The system of claim 1 wherein the drive information and the user interface rendering data is displayed in a graphical user interface.

9. The system of claim 1 wherein the drive controller retrieves updated drive information based at least in part on input from the user interface module.

10. The system of claim 1 wherein the drive controller receives control instructions from the user interface module.

11. A method executed by a processor, comprising:

receiving drive information and graphical user interface rendering data generated by a drive controller at a data access drive of a storage system, wherein the drive information comprises a status of the data access drive and an operating speed of the data access drive;

outputting the drive information in a graphical user interface in accordance with the graphical user interface rendering data; and

receiving an indication of activation of a button in the graphical user interface, wherein activation of the button is a request for the drive information, and wherein receiving the drive information and graphical user interface rendering data is in response to the indication of activation of the button.

12. The method of claim 11 wherein receiving the drive information and the graphical user interface rendering data is via a system controller.

13. The method of claim 11 wherein receiving the graphical user interface rendering data comprises receiving the graphical user interface rendering data from a render engine executed by the drive controller at the data access drive.

14. The method of claim 11, wherein outputting the drive information comprises displaying the drive information in the graphical user interface in accordance with the graphical user interface rendering data.

17. The method of claim 11 further comprising:

receiving a second indication of activation of the button in the graphical user interface; and

outputting updated drive information in the graphical user interface in response to receiving the second indication.

18. In an automated storage system having a graphical user interface including a display and a user interface selection device, a method of providing and selecting from the display comprising:

receiving activation of a button in the graphical user interface, wherein activation of the button is a request for drive information of a data access device in the automated storage system, wherein the drive information comprises a status of the data access drive and an operating speed of the data access drive; and

sending an indication regarding the activation of the button to a drive controller at the data access drive;

responsive to the indication regarding the activation of the button, receiving drive information and graphical user interface rendering data from the drive controller; and

displaying the drive information in an application window in the graphical user interface in accordance with the graphical user interface rendering data.

20. The method of claim 18, further comprising:

receiving a second activation of the button;

sending a second indication regarding the second activation of the button to the drive controller; and

receiving updated drive information that represents a state change of the data access drive, and corresponding updated graphical user interface rendering data from the drive controller; and

displaying the updated drive information in the application window in accordance with the updated graphical user interface rendering data.

21. The system of claim 1, wherein the user interface rendering data enables drawing of a graphical image in the user interface.

23. The system of claim 1, wherein the drive information further comprises an error rate of the data access drive.

24. The system of claim 1, wherein the user interface comprises a graphical user interface, wherein the user interface rendering data comprises a graphical user interface rendering data, and wherein the user interface module displays the drive information in a window of the graphical user interface in accordance with the graphical user interface rendering data.

25. The method of claim 11, further comprising sending output regarding activation of the button to the drive controller, wherein the drive information and graphical user interface rendering data is generated by the drive controller in response to the output.

26. The method of claim 18 wherein receiving the graphical user interface rendering data comprises receiving the graphical user interface rendering data from a render engine executed by the drive controller at the data access drive.

IX. EVIDENCE APPENDIX

None.

X. RELATED PROCEEDINGS APPENDIX

None.